

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 08-307514

(43)Date of publication of application : 22.11.1996

(51)Int.Cl.

H04M 1/57
H04M 1/00

(21)Application number : 07-113022

(71)Applicant : BROTHER IND LTD

(22)Date of filing : 11.05.1995

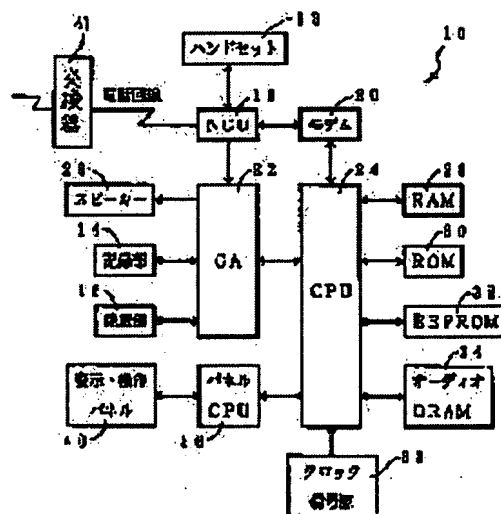
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(54) COMMUNICATION EQUIPMENT

(57)Abstract:

PURPOSE: To easily set a ring back tone for grasping from where a phone call is made by storing the ring back tone corresponding to any one of stored telephone number information and name information in the state of displaying this information.

CONSTITUTION: Plural telephone numbers are stored in advance in an EEPROM 32, which can write data or can electrically erase those data, and calling messages are stored in an audio DRAM 34 corresponding to those telephone numbers. Thus, when a phone call is incoming by using any one of those telephone numbers, the correspondent calling message is read out of the audio DRAM 34 and generated from a speaker 26. Therefore, who makes the phone call can be identified more easily in comparison with the case of simply displaying the call originating side telephone number. Besides, since the desired calling message is recorded, who makes the phone call can be clearly distinguished by a voice that a user can most easily recognize.



LEGAL STATUS

[Date of request for examination] 16.09.1998

[Date of sending the examiner's decision of] 10.09.2002

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the communication device which is sent from the exchange and which can receive the call origination side telephone number at least.

[0002]

[Description of the Prior Art] Conventionally, if the telephone number of a called party is dialed by the telephone by the side of call origination, after carrying out Iriki in case a call signal carries out Iriki to the telephone of a called party or, the communication system with which the call origination side telephone number (CALLER ID) is transmitted to the telephone of a called party from this exchange is known. In this communication system, before closing a circuit by the telephone of a called party, since a called party can check where it has been telephoned from by displaying the call origination side telephone number, from the partner who does not know like a crank call, management of making it not come out etc. is attained and is effectively used for the telephone.

[0003]

[Problem(s) to be Solved by the Invention] However, only by the call origination side telephone number being displayed in a called party, it needed to carry out till the place whose called party is telephone whenever ringing tone sounds, when there is no telephone near the called party, the call origination side telephone number needed to be checked, and it was troublesome. For this reason, even if it did not go till the place whose called party is telephone, equipment which can grasp easily the telephone from where it is was desired.

[0004] It is made in order that this invention may solve the above-mentioned technical problem, and it aims at offering the communication device which can set up easily the ringing tone for grasping where it was telephoned from.

[0005]

[Means for Solving the Problem] The communication device applied to invention according to claim 1 in order to attain this purpose The storage means for matching and memorizing telephone number information and identifier information, The display means for displaying at least one of the telephone number information and identifier information which were memorized by the storage means, The sound recording means for recording predetermined ringing tone to the information memorized by said storage means, Where at least one of the telephone number information memorized by said storage means and the identifier information is displayed on said display means, when said sound recording means operates, it has a storage control means to make said ringing tone memorize corresponding to said information.

[0006] Moreover, in the communication device concerning invention according to claim 2, said display means gives priority to identifier information over telephone number information, and displays it.

[0007] Furthermore, the communication device concerning invention according to claim 3 is equipped with a detection means to detect that ringing tone was memorized by said storage control means, and a display-control means to update said information displayed on said display means after detection by the

detection means.

[0008] Moreover, the communication device concerning invention according to claim 4 is equipped with a comparison means to compare the telephone number information memorized by said storage means with the call origination side telephone number sent from the exchange, and a ringing-tone generating means to generate the ringing tone corresponding to the information when in agreement with the telephone number information said call origination side telephone number was remembered to be by said storage means with the comparison means.

[0009] And the communication device concerning invention according to claim 5 The storage means for matching and memorizing telephone number information and identifier information, The display means for displaying at least one of the telephone number information and identifier information which were memorized by the storage means, By memorizing said ringing tone for said ringing-tone storage means, where the information memorized by the ringing-tone storage means and said storage means for memorizing the ringing tone corresponding to the information memorized by said storage means is displayed on said display means It has the control means which matches said information and ringing tone.

[0010] Furthermore, the communication device concerning invention according to claim 6 The storage means for matching and memorizing the phonetic memory means, and the telephone number information and identifier information for memorizing the 1st ringing tone beforehand, The sound recording means for recording the 2nd ringing tone to the information memorized by said storage means, A comparison means to compare the telephone number information memorized by said storage means with the call origination side telephone number sent from the exchange, When in agreement with the telephone number information said call origination side telephone number was remembered to be by said storage means with the comparison means, it has a ringing-tone generating means to compound the 2nd ringing tone corresponding to the information, and the 1st ringing tone memorized by said phonetic memory means, and to generate.

[0011]

[Function] If predetermined ringing tone is recorded by the sound-recording means where at least one of the telephone number information and identifier information which were memorized by the storage means is displayed on a display means, in the communication device concerning invention according to claim 1 which has the above-mentioned configuration, it will become possible to memorize ringing tone, said ringing tone being memorized by the storage control means corresponding to said information, and checking a display.

[0012] Moreover, in the communication device concerning invention according to claim 2, it becomes possible to memorize ringing tone, priority being given to identifier information over telephone number information by said display means, it being displayed on it, and checking identifier information.

[0013] Furthermore, in the communication device concerning invention according to claim 3, if it is detected by the detection means that ringing tone was memorized by said storage control means, the information displayed on said display means by the display-control means will be updated after detection by the detection means, and it will become possible to memorize ringing tone continuously.

[0014] Moreover, it sets to the communication device concerning invention according to claim 4. The telephone number information memorized by said storage means and the call origination side telephone number sent from the exchange are compared by the comparison means. When in agreement with the telephone number information said call origination side telephone number was remembered to be by said storage means with the comparison means, the ringing tone corresponding to the information is generated by the ringing-tone generating means, and it becomes possible to judge easily from whom it was telephoned.

[0015] Furthermore, it becomes possible to memorize ringing tone by memorizing ringing tone for a ringing-tone storage means, where the information which telephone number information and identifier information matched, was memorized by the storage means in the communication device concerning invention according to claim 5, and was memorized by the storage means is displayed on a display means, said information and ringing tone being matched by the control means, and checking a display

by it.

[0016] And in the communication device concerning invention according to claim 6, the 2nd ringing tone is recorded by the sound recording means to the information which telephone number information and identifier information matched, was memorized by the storage means, and was memorized by the storage means. Then, if the telephone number information memorized by said storage means and the call origination side telephone number sent from the exchange are compared by the comparison means When in agreement with the telephone number information said call origination side telephone number was remembered to be by said storage means with the comparison means, The 2nd ringing tone corresponding to the information and the 1st ringing tone beforehand memorized by the phonetic memory means are compounded, it is generated by the ringing-tone generating means, and it becomes possible to record ringing tone quickly.

[0017]

[Example] Hereafter, the example of this invention is explained to a detail based on a drawing.

[0018] Drawing 1 is a block diagram explaining the main configurations of the facsimile apparatus 10 as telephone equipment with which this invention was applied. This facsimile apparatus 10 can perform telephone communication and pictorial communication alternatively, and is equipped with the read station 16 which reads an image by the Records Department 14 which records an image by the hand set 12 for performing telephone communication, a printer, etc., a CCD image sensor, etc.

[0019] the telephone exchange -- a firm -- an exchanger -- 41 -- connecting -- having -- **** -- the telephone line -- a network control unit (NCU) -- 18 -- connecting -- having -- **** -- the -- a network control unit -- 18 -- the above -- a hand set -- 12 -- a picture signal -- a modulation -- and -- a recovery -- etc. -- carrying out -- a modem -- 20 -- and -- a gate array -- (-- GA --) -- 22 -- connecting -- having -- **** . Many logical circuits for realizing various functions are stored in the gate array 22, and while driving a loudspeaker 26 or controlling actuation of said Records Department 14 and a read station 16 according to the driving signal supplied from CPU24, the data read by the read station 16 are transmitted to CPU24. The gate array 22 is equipped with the function to generate ringing tone from a loudspeaker 26, or to detect the frequency of the various signals supplied through a network control unit 18 from the telephone line again synchronizing with ON of the call signal CI (Calling Indicate) supplied through a network control unit 18 from the telephone line, and OFF.

[0020] If the called party has registered that he is the subscriber of call origination side telephone number reception service into the exchanger 41 when a call signal CI is supplied from the telephone line, in the silent section between the first call signal and the following call signal, through the exchanger 41, the call origination side telephone number is the switching system sent to the facsimile apparatus 10 of a called party as a signal of predetermined frequency, and is already put in practical use in the switching system of an analog in the United States.

[0021] CPU24 using the temporary storage function of RAM28, according to the program memorized beforehand, perform signal processing to ROM30, and it connects with it with said modem 20 and the gate array 22 through the data bus line, and also it connects with EEPROM32, the audio DRAM 34, and the panel CPU 36, and the clock signal of constant frequency is supplied from the sources 38 of a clock signal, such as a crystal oscillator. EEPROM32 is the memory which data are written in or can eliminate the data electrically, and it is equipped with the area which memorizes the telephone number and the phase hand name corresponding to abbreviated dialing as an abbreviated dialing list as shown in (a) of drawing 2 . Moreover, the audio DRAM 34 is equipped with the call message storage area which memorizes the call message corresponding to the telephone number of an abbreviated dialing list besides each storage area for the answering machine (TAD) which memorizes reminder messages, such as an income message (ICM) sent by the out go message (OGM) told to the partner as it is and is shown in (b) of drawing 2 and partner for memorizing the data of a voice-told message, or a message.

[0022] This is for making it generate a different call message for every telephone number in order to make a called party identify whether it is the telephone got from whom based on the telephone number sent from the exchanger 41. For example, what is necessary is to make the call message storage area of an audio DRAM 34 memorize the call message "it is a telephone from Mr. SUZUKI" to the telephone

number "1111" memorized by EEPROM32, and just to make the call message storage area of an audio DRAM 34 memorize the call message "it is a telephone from Mr. NAKAMURA" to the telephone number "3333", as shown in drawing 3 . The contents of the call message are examples and a user should just set them up freely.

[0023] The display and the control panel 40 are connected to said panel CPU 36, the contents of a display of a display and a control panel 40 are controlled according to the signal from CPU24, or the contents of actuation of a display and a control panel 40 are transmitted to CPU24. Drawing 4 is an example of a display and a control panel 40, and is equipped with the drops 50, such as a ten key 42, a function key 44, the selection key 46, the arrival-of-the-mail mode setting key 48, and a liquid crystal display, etc. A ten key 42 is for inputting the telephone number etc., and is equipped with the keys from "0" to "9." A function key 44 is for changing a setup of the various functions shown in drawing 5 , or registering, and after it carries out press actuation of the function key 44, it can perform setting modification, registration, etc. of various functions by carrying out press actuation of the selection key 46 in a predetermined procedure.

[0024] Make the facsimile apparatus 10 of this example into abbreviated dialing register mode by actuation of the above-mentioned function key 44 and the selection key 46, or If it can be set as the sound recording mode of a call message and is set as abbreviated dialing register mode, while EEPROM32 can be made to memorize the telephone number, a phase hand name, etc. corresponding to abbreviated dialing If it is set as the sound recording mode of a call message, an audio DRAM 34 can be made to memorize the aforementioned call message corresponding to the telephone number memorized by the abbreviated dialing list.

[0025] When the setting approach of abbreviated dialing register mode is explained concretely, it is MAIN of drawing 5 . What is necessary is just to carry out press actuation of "3" of the selection key 46, and "1", after carrying out press actuation of the function key 44 and considering as function mode, since it can set up by setting ITEM to "3. SET AUTO DIAL" and making SUB-ITEM into "1. SPEED-DIAL." In this condition, it is displayed on a drop 50 as "3. SET AUTO DIAL", and if press actuation of "1" of the selection key 46 which serves as the set key is carried out, an indication to which a setup of abbreviated dialing is urged will be given to a drop 50.

[0026] If press actuation of "1" of the selection key 46 which inputted the desired abbreviated dialing number with the ten key 42, and serves as the set key at this time is carried out, an indication to which a setup of the back telephone number into which that abbreviated number was registered is urged will be given. Furthermore, by inputting similarly the telephone number registering into the abbreviated dialing, and carrying out press actuation of "1" of the selection key 46, after the telephone number is registered, an indication to which a setup of a phase hand name is urged is given. About the phase hand name, it is registered similarly. What is necessary is just to repeat this actuation, when setting up two or more abbreviated dialing. If all setup is completed and press actuation of the stop key 52 is carried out, it will slip out of function mode.

[0027] Said arrival-of-the-mail mode setting key 48 is for switching arrival-of-the-mail mode, and can be chosen now by this example from automatic (AUTO) mode, F/T mode, answering machine (TAD) mode, and a manual mode. Automatic mode performs image communications processing with automatic, after carrying out singing of the convention time ringing tone, and F/T mode shifts to image communications processing, when singing of the after [arrival of the mail] fixed time amount false ringing tone is carried out and a hand set 12 and the hook key 54 are not operated by all. Although answering machine mode performs pictorial communication processing when ID signal which directs the CNG signal or pictorial communication processing in_which it expresses that it is after [arrival of the mail] pictorial communication is transmitted by the partner, when that is not right, it outputs the out go message memorized by the back audio DRAM 34 to which singing of the fixed time-amount false ringing tone was carried out, and memorizes it in an audio DRAM 34 by making into an income message the message sent by the partner.

[0028] Moreover, a manual mode shifts to pictorial communication processing, only when singing of the ringing tone is only carried out and a user does press actuation of the start key 56. Whenever this arrival-

of-the-mail mode carries out press actuation of the above-mentioned arrival-of-the-mail mode setting key 48, it switches, and it expresses that lighting of LED58 is automatic mode, and expresses that lighting of LED60 is in F/T mode, when LED 58 and 60 is [both] on, it expresses that it is in answering machine mode, and when LED 58 and 60 is not all on, it expresses that it is a manual mode. It is memorized by RAM28 also about this arrival-of-the-mail mode whether it is set as which the mode.

[0029] Next, registration processing of the abbreviated dialing in the facsimile apparatus 10 constituted in this way is explained based on the flow chart of drawing 6.

[0030] This processing is started by turning on the ten key 42 of a display and a control panel 40 in the abbreviated dialing register mode mentioned above. First, it judges whether the abbreviated number (for example, 001-200) was inputted by the ten key 42 (S1). If it judges whether the telephone number which should be registered was inputted by the ten key 42 if the abbreviated number was inputted (it is YES at S1) (S3) and the telephone number which should be registered is inputted (it is YES at S3), it will judge whether the phase hand name was further inputted by the ten key 42 (S5). If a phase hand name is inputted (it is YES at S5), the telephone number and a phase hand name will be memorized in the form corresponding to said abbreviated number to the abbreviated dialing list prepared in the predetermined field of EEPROM32 (S7).

[0031] Furthermore, in this example, it is constituted so that a call message can also be recorded from this condition, and if sound recording of a call message is not performed, without raising a hand set 12 within 3 seconds (it is NO at S9), when ending this processing and registering an abbreviated number succeedingly, the processing from S1 is repeated. Moreover, if a hand set 12 is raised within said 3 seconds (it is YES at S9), it will progress to S15 of drawing 7.

[0032] Next, in memorizing a call message in said audio DRAM 34, it sets it as the sound recording mode of a call message by press actuation of a function key 44 and the selection key 46 first. By this, signal processing comes to be performed according to the flow chart of drawing 7, the display of the contents "input an abbreviated number (001-200)", for example, the display "SEL TELNO." (001-200), is displayed on a drop 50 (S11), and it judges whether the ten key 42 was pressed (S12). What is necessary is just to carry out press actuation of "002" of a ten key 42 at this time, in recording the call message which makes it generate when press actuation of "001" of a ten key 42 is carried out and it has got the telephone call from Mr. NAKAMURA of the telephone number "3333", in recording the call message which makes it generate when the telephone call has been got from Mr. SUZUKI of the telephone number "1111."

[0033] Press any of "001" - "200" of a ten key 42 they are displays the display of the contents "raise a hand set", for example, the display "PICKUP HANDSET", on a drop 50 (S13). (it is YES at S12) Then, if it judges whether the hand set 12 was raised (S14) and a hand set 12 is raised (it is YES at S14), the display showing being "under sound recording", for example, displays, such as "RECORD 00 / 20", will be displayed on a drop 50 (S15). This display also combines sound recording elapsed time, and is displayed, while of "00/20", "00" of a molecule is counted up for every second by sound recording elapsed time, and "20" of a denominator expresses that the longest sound recording time amount is 20 seconds. 20 seconds of the longest sound recording time amount may be changed suitably.

[0034] And if a call message to record from the microphone of a hand set 12 in this condition is inputted, the storage area of a number (abbreviated number) which the data for generating, that call message, i.e., ringing tone, inputted with said ten key 42 among the call message storage areas of an audio DRAM 34 will memorize. namely, in order to record the call message which shows that it is a telephone from Mr. SUZUKI, when press actuation of "001" of a ten key 42 is carried out For example, that what is necessary is just to input the call message "it is a telephone from Mr. SUZUKI" What is necessary is just to input the call message "it is a telephone from Mr. NAKAMURA", for example, when press actuation of "002" of a ten key 42 is carried out, in order to record the call message which shows that it is a telephone from Mr. NAKAMURA.

[0035] When the telephone number and a phase hand name are already registered to abbreviated dialing at this time, after "RECORD 00 / 20" are displayed for 1 second, the phase hand name corresponding to the inputted abbreviated dialing is displayed on an indicator 50 for 5 seconds, and a call message can be

recorded, checking this display. Since it is displayed on an indicator 50 by turns between the sound recording time amount for 20 seconds for every number of seconds of the above ["RECORD 00 / 20", and a phase hand name], this display can record a call message to record a call message comparatively long, checking both the time amount which can be recorded, and a phase hand name. When only the telephone number is registered to abbreviated dialing and the phase hand name is not registered, the telephone number is displayed on a drop 50. If this display has the double or more figures display capacity of a drop 50, it can also display all abbreviated dialing numbers, the telephone numbers, and phase hand names at a time.

[0036] And press of "1" of the selection key 46 which serves as the set key displays NAKAMURA which is a phase hand name corresponding to the following abbreviated dialing "002" on a drop 50 (S18). (it is YES at S16) Moreover, if the condition of not being recorded for 3 seconds continues even if "1" of said selection key 46 is not pressed (it is YES at S17), it will progress to the following S18 automatically. In addition, in S18, it is displayed on a drop 50 by turns between the sound recording time amount for 20 seconds like S15 for every number of seconds of the above [the display of "RECORD 00 / 20", and the display of a phase hand name].

[0037] Subsequently, it judges whether the hand set 12 was taken down (S19), and if taken down (it is YES at S19), it will shift to S20. Moreover, when a hand set 12 is raised, processing of NO) and S15 to S18 is repeated by (S19, and the call message corresponding to abbreviated dialing can be recorded one after another.

[0038] In S20, while slipping out of the sound recording mode in which a call message can be recorded, since "sound recording termination" is expressed, it displays on the above "1. SPEED-DIAL" and a drop 50. If press actuation of the stop key 52 is further carried out in this condition, it will slip out also of function mode, but if press actuation of "1" of the selection key 46 which serves as the set key is carried out, it becomes the register mode of a call message again, and another call message can be recorded like the above.

[0039] Next, the main routine of a facsimile reception control is explained based on the flow chart of drawing 8.

[0040] This processing is started, when a power source is turned on and facsimile apparatus 1 becomes receivable. It judges whether when this processing was started, first, the call signal was detected or call-in detection was carried out (S21). If a call signal is detected (it is YES at S21), it will judge whether the call origination side telephone number has been sent from the exchange 41 (S23). If the call origination side telephone number has been sent (it is YES at S23), will receive the call origination side telephone number and it will memorize temporarily to the call origination side telephone number storage area of RAM28 (S25). After displaying this telephone number on the drop 50 of a display and a control panel 40 (S27), the below-mentioned calling-party-discrimination processing is performed (S29). If the call origination side telephone number is not sent by S23 (it is NO at S23), the usual ringing sound is outputted.

[0041] Then, calling-party-discrimination processing (S29) is concretely explained based on the flow chart of drawing 9.

[0042] If this processing is started, it will judge whether the call origination side telephone number is first memorized by the call origination side telephone number storage area of RAM28 (S31). If the call origination side telephone number is memorized (it is YES at S31), it will judge whether the telephone number corresponding to the call origination side telephone number is in the abbreviated dialing list of EEPROM32 (S33). If there is the corresponding telephone number (it is YES at S33), it will judge whether the call message corresponding to the telephone number is further memorized by the audio DRAM 34 (S35).

[0043] If it is judged that the call message is memorized at step S35, the above-mentioned call message will be read from an audio DRAM 34, and will be generated from a loudspeaker 26 (S37). For example, since the telephone number is registered into the abbreviated dialing list of EEPROM32 and the call message is further registered into the audio DRAM 34 when telephoned from Mr. SUZUKI of the telephone number "1111", the message "it is a telephone from Mr. SUZUKI" is generated from a

loudspeaker 26 during the OFF period of a call signal CI.

[0044] Since it continues being generated during that OFF period as long as singing continues being carried out [sound / ringing], even if this call message is not near the telephone, it can know easily from whom the telephone call has been got. If a hand set is raised in this condition (it is YES at S39), a message is received and the usual conversation can be held (S41).

[0045] Here the facsimile apparatus 10 of this example While memorizing two or more telephone numbers to EEPROM32 beforehand, by memorizing the call message in the audio DRAM 34 corresponding to the telephone number Since a corresponding call message is read from an audio DRAM 34 and it is generated from a loudspeaker 26 when the telephone call has been got with the telephone numbers, such as it, it is easily discriminable whether it is the telephone got from whom as compared with the case where the telephone number by the side of call origination is only displayed. It is able to enable it to distinguish clearly especially with the voice with the most intelligible user in whether since the call message for which it asks by the user in this example can be recorded, it is the telephone got from whom.

[0046] moreover, when neither the case where the call message corresponding to the call origination side telephone number is not registered into an audio DRAM 34, nor the call origination side telephone number is sent from an exchange side, especially in order to only carry out [sound / usual / ringing] singing, there is also no sense of incongruity, and it is a telephone from an unknown partner at the time of the usual ringing sound -- etc. -- it can also guess.

[0047] Next, the 2nd example which materialized this invention is explained.

[0048] In this example, the call message storage area shown in (b) of drawing 2 is divided into the 1st area and the 2nd area, and predetermined ringing tone is memorized beforehand in the 1st area. That is, it is set as the sound recording mode of the 1st call message by press actuation of a function key 44 and the selection key 46 as well as the actuation mentioned above, a hand set is raised in this condition, and the predetermined message, for example, "it is a telephone from ****", is recorded as 1st call message.

[0049] Moreover, in the 2nd area of said call message storage area, "SUZUKI" is recorded as 2nd call message to the call message in the audio DRAM 34 shown in drawing 3 "it is a telephone from Mr. SUZUKI." This is equivalent to the call message inputted in step Q5 of drawing 7 mentioned above. Here, in said example, the call message inputted as "It is a telephone from Mr. SUZUKI" will be inputted as "SUZUKI." Also when inputting two or more call messages succeedingly, the contents of the call message inputted only differ and all other steps are common.

[0050] Thus, detection of the back call signal into which all call messages were inputted performs processing of drawing 8 like said example. Furthermore, in calling-party-discrimination processing, while the 2nd call message is read from said 2nd area of an audio DRAM 34 at step S37, the 1st call message is read from said 1st area. Finally these [1st] and the 2nd call message are compounded, and it is generated as a call message from a loudspeaker 26 during the OFF period of a call signal CI.

[0051] For example, while the call message of "SUZUKI" is read from said 2nd area since the telephone number is registered into the abbreviated dialing list of EEPROM32 and the call message is further registered into the audio DRAM 34 when telephoned from Mr. SUZUKI of the telephone number "1111", the call message of "being a telephone from ****" is read from said 1st area. By compounding these call messages, the message "it is a telephone from Mr. SUZUKI" is generated from a loudspeaker 26 during the OFF period of a call signal CI. About next processing, it is the same as that of said example.

[0052] one finite call message used for a call is only memorized, and only the call message which changes by the call origination side is made to memorize in order in this example -- being sufficient -- since -- there will also be little storage capacity of a call message and it not only can also perform the input of a call message quickly, but it will end.

[0053] As mentioned above, although the example of this invention was explained to the detail based on the drawing, this invention can also be carried out in other modes.

[0054] For example, although said example explained the case where this invention was applied to facsimile apparatus 10, this invention may be similarly applied to the telephone equipment which is not

equipped with the pictorial communication function.

[0055] Moreover, although a function key 44 and the selection key 46 are operated, and it is set as abbreviated dialing register mode or is set as the sound recording mode of a call message in said example, you may enable it to set it as each mode by one key stroke like arrival-of-the-mail mode.

[0056] Moreover, although the call message equivalent to a phase hand name was recorded in said example, if clearly distinguishable, things which can be chosen suitably, such as an initial, cannot be overemphasized irrespective of a phase hand name. Moreover, it is possible to change suitably also about the storage which memorizes an abbreviated dialing list and a call message.

[0057] Moreover, although a call message is memorized in said example in the audio DRAM 34 which memorizes the message for answering machines, the storage only for call messages may be used with the telephone equipment which is not equipped with the answering machine function.

[0058] Moreover, although the hand set 12 was raised in said example when memorizing a call message, the actuation in the case of registration, such as making it record using a microphone with the condition of having set the hand set, or making it register by one key stroke etc., can be changed suitably.

[0059] Moreover, although it will be rewritten by the new telephone number in registration processing of the abbreviated dialing of said drawing 6 when the storage area of the abbreviated number is made to memorize the telephone number immediately and the telephone number is already registered if an abbreviated number is inputted by the ten key 42 The registered telephone number is displayed or a register reject or a registered purport is told by the alarm, a voice-told message, etc., and when it succeeds in register operation with a ten key 42 etc. again, you may make it rewrite, in order to check whether you may rewrite or not. The same is said of sound recording processing of the call message of drawing 7.

[0060] Moreover, although the telephone number corresponding to the call origination side telephone number was searched with the above-mentioned example using the abbreviated dialing list, an one-touch dial list, a telephone directory list, etc. may be used in addition to an abbreviated dialing list. Moreover, after a hand set 12 is raised in the call origination side telephone number currently displayed on the drop 50 and conversation is held at the time of a call in, while it is for a while even after taking down a hand set 12, the display is continued, a call message is recorded in the condition, and you may make it added to an abbreviated dialing list.

[0061] Moreover, although it calls where the telephone number or the identifier memorized by the abbreviated dialing list is displayed, and the message was recorded in the above-mentioned example, even after talking the telephone number or the identifier sent through the circuit at the time of a call in by closing a circuit and releasing a circuit, the display is continued succeedingly, and you may make it record the call message which corresponds while looking at the display.

[0062] Furthermore, although only the 1st one call message was memorized in the 2nd example, it is also possible to be also able to memorize two or more these, and they to compound the call message of these plurality suitably with the 2nd call message, to change combination by the call origination side, and to generate a clearer call message.

[0063] In addition, although instantiation is not carried out one by one, this invention can be carried out in the mode which added various modification and amelioration based on this contractor's knowledge.

[0064]

[Effect of the Invention] Thus, since ringing tone is memorized corresponding to the information by recording ringing tone where the telephone number information or identifier information memorized by the storage means is displayed according to the communication device concerning invention according to claim 1, it has the effectiveness that the ringing tone corresponding to the telephone number can be registered easily and certainly while checking a display.

[0065] Moreover, only for telephone number information, in order according to the communication device concerning invention according to claim 2 to give priority to identifier information over telephone number information and to display it, when ringing tone cannot be decided, it has the effectiveness that the time and effort which switches a display to identifier information from telephone number information cannot be taken, but ringing tone can be registered quickly.

[0066] Furthermore, if it is detected according to the communication device concerning invention according to claim 3 that ringing tone was memorized, since the information displayed on the display means will be updated, it has the effectiveness that the easy ringing tone of plurality quickly can be registered continuously.

[0067] And since according to the communication device concerning invention according to claim 4 the call origination side telephone number sent from the exchange is compared with the telephone number information memorized by the storage means and the ringing tone corresponding to the information is generated, it has the effectiveness which can be judged even if it is not near the telephone whether it is the telephone got from whom.

[0068] Thus, since the information and said ringing tone are matched by memorizing ringing tone where the telephone number information or identifier information memorized by the storage means is displayed according to the communication device concerning invention according to claim 5, it has the effectiveness which can easily and certainly match the telephone number and ringing tone while checking a display.

[0069] And according to the communication device concerning invention according to claim 6, the call origination side telephone number sent from the exchange is compared with the telephone number information memorized by the storage means. Since the 1st ringing tone beforehand memorized by the phonetic memory means and the 2nd recorded ringing tone are compounded and generated, It is not necessary to record all the ringing tone generated, and has the effectiveness it not only can register ringing tone easily and quickly, but that there can also be little storage capacity of ringing tone, and it can end, and can save memory.

[Translation done.]

JAPANESE [JP,08-307514,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE
INVENTION TECHNICAL PROBLEM MEANS OPERATION EXAMPLE DESCRIPTION OF
DRAWINGS DRAWINGS

[Translation done.]

* NOTICES *

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] In the communication device which is sent from the exchange and which can receive the call origination side telephone number at least The storage means for matching and memorizing telephone number information and identifier information, The display means for displaying at least one of the telephone number information and identifier information which were memorized by the storage means, The sound recording means for recording predetermined ringing tone to the information memorized by said storage means, The communication device characterized by having a storage control means to make said ringing tone memorize corresponding to said information when said sound recording means operates, where at least one of the telephone number information memorized by said storage means and the identifier information is displayed on said display means.

[Claim 2] Said display means is a communication device according to claim 1 characterized by giving priority to identifier information over telephone number information, and displaying it.

[Claim 3] The communication device according to claim 1 or 2 characterized by having a detection means to detect that ringing tone was memorized by said storage control means, and a display-control means to update said information displayed on said display means after detection by the detection means.

[Claim 4] The communication device according to claim 1 to 3 characterized by having a comparison means to compare the telephone number information memorized by said storage means with the call origination side telephone number sent from the exchange, and a ringing-tone generating means to generate the ringing tone corresponding to the information when in agreement with the telephone number information said call origination side telephone number was remembered to be by said storage means with the comparison means.

[Claim 5] In the communication device which is sent from the exchange and which can receive the call origination side telephone number at least The storage means for matching and memorizing telephone number information and identifier information, The display means for displaying at least one of the telephone number information and identifier information which were memorized by the storage means, By memorizing said ringing tone for said ringing-tone storage means, where the information memorized by the ringing-tone storage means and said storage means for memorizing the ringing tone corresponding to the information memorized by said storage means is displayed on said display means The communication device characterized by having the control means which matches said information and ringing tone.

[Claim 6] In the communication device which is sent from the exchange and which can receive the call origination side telephone number at least The storage means for matching and memorizing the phonetic memory means, and the telephone number information and identifier information for memorizing the 1st ringing tone beforehand, The sound recording means for recording the 2nd ringing tone to the information memorized by said storage means, A comparison means to compare the telephone number information memorized by said storage means with the call origination side telephone number sent from the exchange, The communication device characterized by having a ringing-tone generating means to

compound the 2nd ringing tone corresponding to the information, and the 1st ringing tone memorized by said phonetic memory means, and to generate when in agreement with the telephone number information said call origination side telephone number was remembered to be by said storage means with the comparison means.

[Translation done.]